



Defense Information Systems Agency

A Combat Support Agency

JITC Interoperability Certification Process

**JITC Policy Team
13 August 2009**

Agenda

- **Interoperability Directives and Instructions**
- **Joint Interoperability Test Certification**
 - **Interoperability Testing Guidelines**
 - **Standards Conformance Testing Guidelines**
 - **Types and Environments**
 - **Four Steps Toward Certification**
- **Certification Support Team**

DISA Directives & Instructions

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DODD 4630.5

“IT and NSS interoperability shall be verified early, and with sufficient frequency throughout a system’s life ...”

CJCSI 6212.01E

“All IT and NSS must be evaluated and certified for Joint interoperability by **DISA (JITC)**.”

DoD 4630/5000

Interoperability is

“the ability to provide and accept data, information, material, and services ...
...includes both the technical exchange of information and the end-to-end operational effectiveness of that exchange, as required for mission accomplishment.”

DODI 4630.8

“All IT and NSS ... must be tested for interoperability before fielding ... and certified by **DISA (JITC)**.”

CJCSI 3170.01G

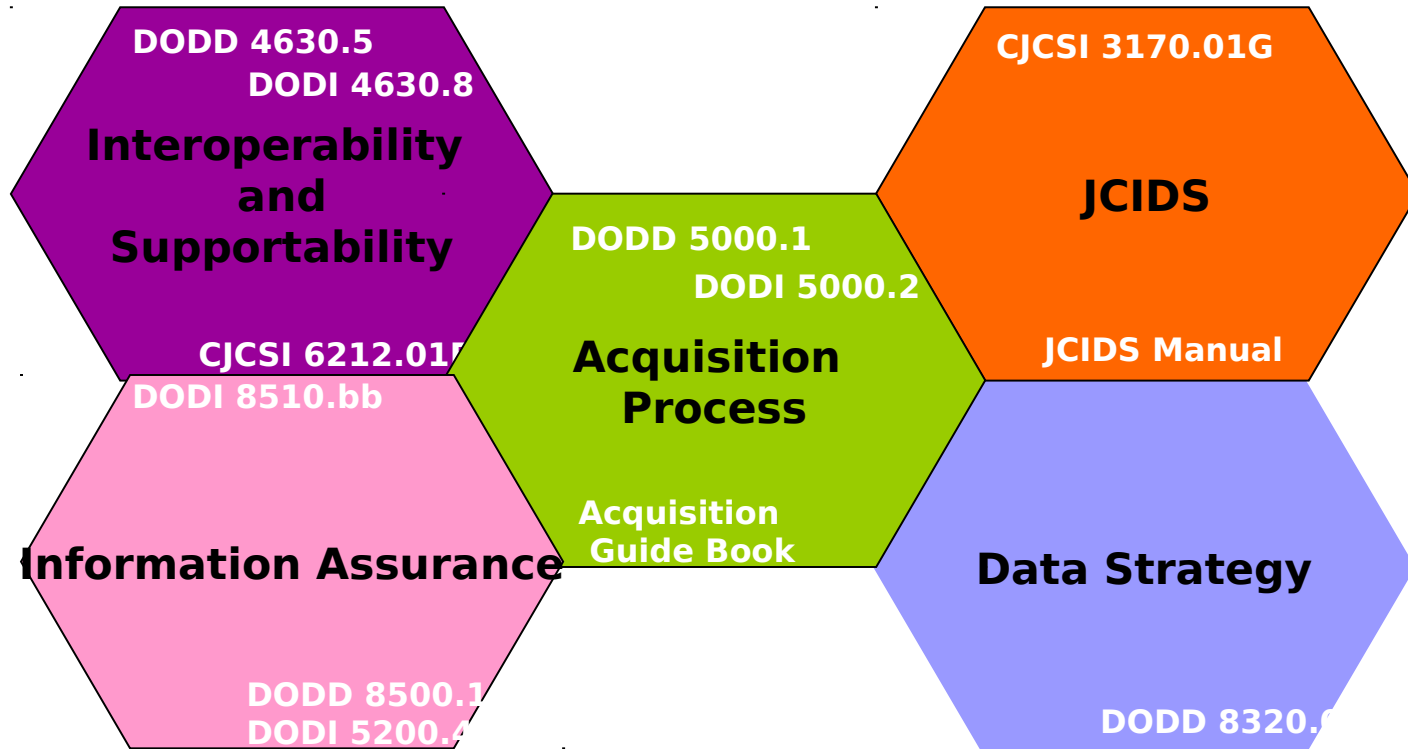
Establishes JCIDS w/ NR-KPP for CDD and CPD

DoD 5000 series

“For IT systems, including NSS, .. **JITC** shall provide system interoperability test certification memoranda ... throughout the system life-cycle and regardless of ACAT”

Net-Centric/Interoperability Guidance

http://jitc.fhu.disa.mil/jitc_dri/jitc.html



What is NR-KPP?

- **A top-down key performance parameter, which replaced the previous Interoperability KPP**
- **Intent of the KPP is to:**
 - *Define the Warfighter's primary information capability needs*
 - *Provide authoritative, measurable and testable characteristics, and/or performance metrics required for the timely, accurate, and complete exchange and use of information*
- **NR-KPP is applicable to:**
 - ✓ **ACAT IT and NSS Systems/Programs**

DODD 4630.5/.8

- **Defines a capability-focused, effects-based approach to advance interoperability and supportability across the Department of Defense**
- **Joint interoperability certification shall be successfully completed prior to fielding**
- **Establishes the NR-KPP to assess net-ready attributes required for both the technical exchange of information and the end-to-end operational effectiveness of that exchange**

DODI 5000.2 Guidance

Applies to:

- **All DOD Major Defense Acquisition Programs (MDAPs)**
- **Programs on Office of the Secretary of Defense (OSD) Test and Evaluation (T&E) Oversight List**
- **Post-acquisition (legacy) systems**
- **All programs & systems that interoperate**
- **All defense technology projects and acquisition programs, except where stated otherwise**

“...subject to interoperability evaluations throughout their life cycles to validate their ability to support mission accomplishment.”

JITC shall provide system interoperability test certification memoranda to the Director, Joint Staff J-6, throughout the system life-cycle and regardless of acquisition category.

CJCSI 6212.01

Test/Certification Guidance

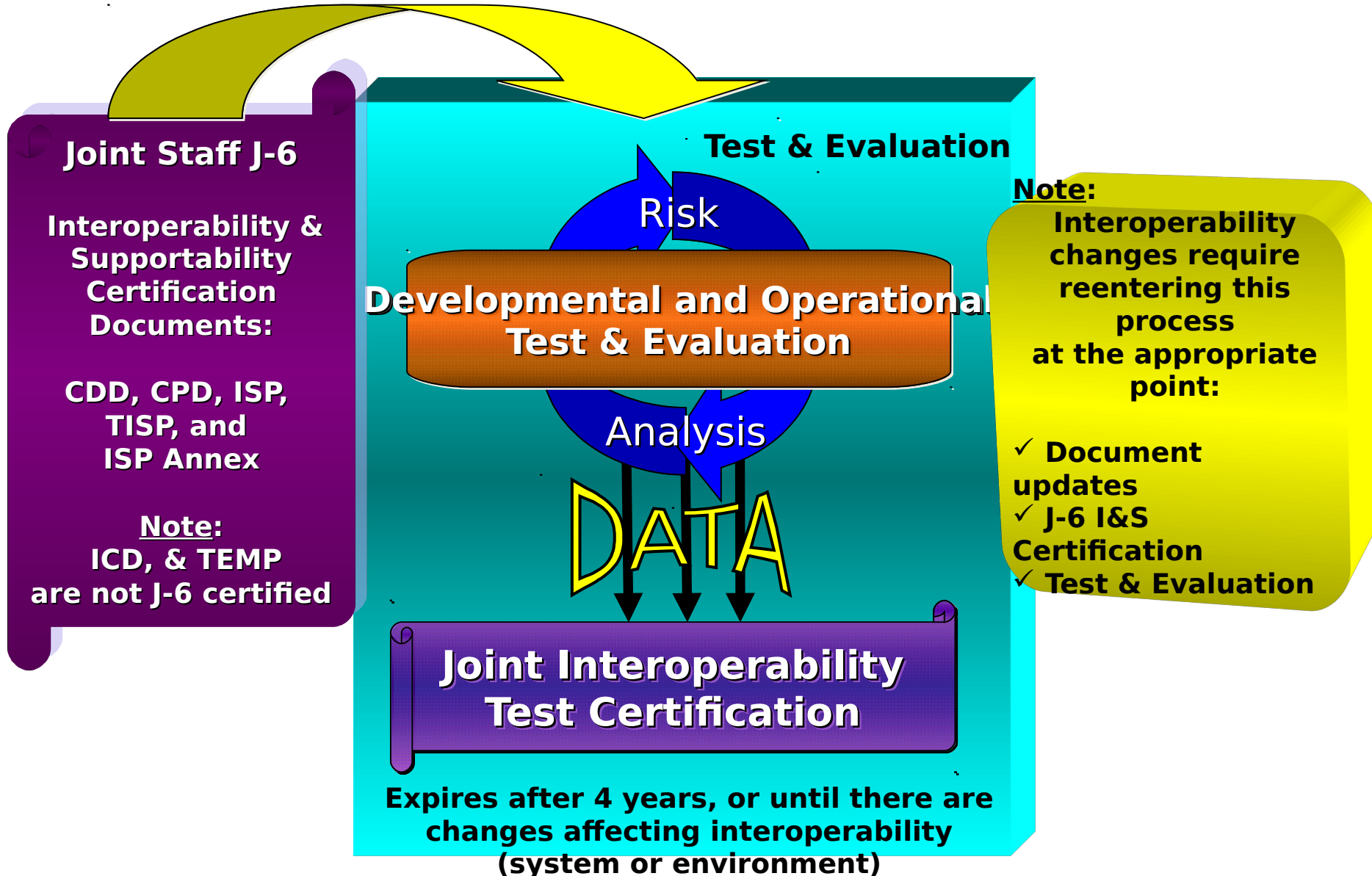
- JITC evaluates interoperability in the **most operationally realistic environment possible**
- ...determines if the system conforms to applicable standards
- ...ensures data collected is adequate for evaluating interoperability issues
- **Details the Net-Ready Key Performance Parameter**



Joint Interoperability Test Certification

DISA NR-KPP T&E Process

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Interoperability Testing Guidelines

- **Use Interoperability Certification Evaluation Plan (ICEP) to manage system certification where applicable**
- **JITC must use a production representative sample for interoperability testing and certification**
- **Test to Joint Staff J-6 certified requirements (CPD, ISP, TISP, ISP Annex, or NR-KPP Package)**
 - **JITC can not certify non-US systems for interoperability**
 - **Must certify ALL requirements for a particular increment/spiral**

Interoperability Testing Guidelines (Continued)

- **Provide operationally realistic, end-to-end testing**
- **Conduct system-level interoperability evaluations/certifications (not “interface” certs)**
 - **Limited Interoperability Test Certification and Standards Conformance Certification are available (described later)**
- **Document incremental system progress toward certification**
- **Characterize and certify using affordable confidence level**

Interoperability Testing Guidelines (Continued)

- **Each program / system has a JITC Capability Test Team (CTT) lead responsible for program / system issues**
 - **Leading and coordinating: requirements document review, funding, planning, testing, and certification tasks**
 - **Putting together test team drawing on SMEs from appropriate support divisions**
 - **Keeping STP entry current with status and results**
- **Support legacy as well as traditional and non-traditional acquisitions**

Standards Conformance Testing Guidelines

- **Standards conformance testing establishes the extent to which a system conforms to the requirements of a standard**
 - **Standards conformance is necessary, but not sufficient to ensure interoperability**
- **JITC may certify conformance to standards for systems (IT/NSS or non-US) that implement standards that can possibly impact interoperability**
 - **DOD and Commercial customers**
 - **Conformance to various standards**
 - **UHF DAMA SATCOM, HF Radio MIL-STD, Secure Fax, etc.**

Standards Conformance Testing Guidelines (Continued)

- **JITC SME will determine which standards require testing vs. some other evaluation method**
- **JITC may also evaluate conformance to NATO STANAGs and issue a standards conformance certification**
- **Standards Conformance Certifications do not normally expire**
 - **A specific hardware/software version is certified conformant to a specific version of a standard**

Testing Types and Environments



Certification



Standards Conformance

- Ability to adhere to rules contained in applicable standards
- Increasing emphasis on data implementation IAW DoD Data Strategy

Laboratory +

Comprehensive data collection for multiple tests under controlled conditions. Can include early user tests, Beta testing, FDCE environment, etc.



Joint Interoperability

Ensures a system effectively exchanges information with other participants in a Net-Centric environment

Live Exercise

Test ability to effectively exchange information in an exercise or test environment with conditions as realistic as possible. Ensures end-to-end interoperability.

Standards provide a necessary building block for ensuring interoperability, but are not sufficient to ensure that systems are interoperable in a joint environment

What Does Certification Involve?

Four Basic Steps

Step 1:

**Identify & Verify
Interoperability
Requirements**

Step 2:

**Develop
Certification
Evaluation
Approach**

Step 3:

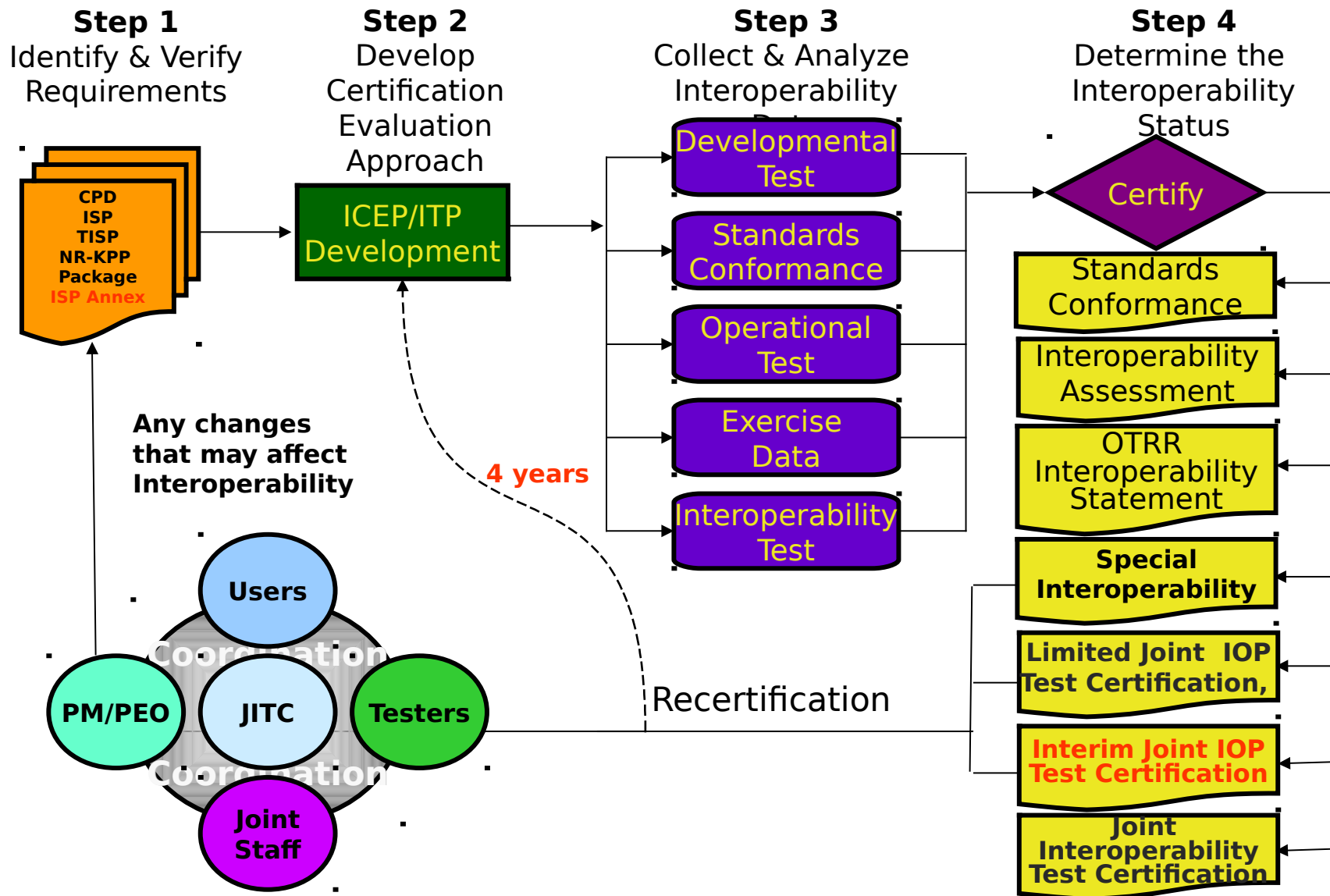
**Collect &
Analyze
Interoperability
Data**

Step 4:

**Determine the
Interoperability
Status**

Certification Status

Interoperability Certification Steps



STEP 1

Step 1:

**Identify & Verify
Interoperability
Requirements**



Has Certified Requirements?

- **Knowledge Management/Decision Support Tool:**

<https://jrockmds1.js.smil.mil/guestjrcz/gbase.guesthome>

- **J6 Assessment Tool - Located in the Joint C4I Program Assessment Tool - Empowered (JCPAT-E) Tool Suite:**

<https://jcpat.ncr.disa.smil.mil/jecoweb.nsf>

- **Primarily used for staffing the requirements/capability document in support of the J-6 Interoperability / Supportability Certification.**

Certified NR-KPP

- **Joint Staff J-6 will certify interoperability and supportability requirements for JCIDS documents for all ACAT**
- **JITC interoperability evaluations must be based on the complete NR-KPP for the particular increment**
 - **Increments (phases, blocks, releases, etc.) for evolutionary developments (including “spirals”) must have an NR-KPP for each increment - if not, the entire NR-KPP must be used**
- **NR-KPP can not be modified without the new NR- KPP being JS J-6 certified**



Systems Without Certified Requirements

- **PM should coordinate with the Joint Staff J-6 regarding requirements issues before JITC certification**
- **J6 POC is:**

**Joint Staff J68 Net Centric Capabilities
Pentagon, Room 2A872**

DSN: 671-9839

Comm: 703-571-9839



Systems With Testing Issues

- **Joint Staff J-6 POC is:**

Joint Staff J65B Joint Testing Branch

Room 1E596

DSN: 222-0905

Comm: 703-692-0905

Systems with Requirements Issues

- Use Joint Staff J-6 and the Interoperability Test Panel to resolve interoperability (req's/testing/ certification) issues, when needed.
- Assessment memorandum:
 - JITC can perform interoperability testing and issue an interoperability assessment memorandum without JS-certified requirements.

**JITC interoperability test certification
memoranda
may not be validated by JS without**

STEP 2

Step 2:

**Develop
Certification
Evaluation
Approach**

Testing Guidelines

- **Inform Program Manager about the evaluation and certification process**
- **Identify all valid interoperability requirements and criticality**
- **Ensure requirements are well-defined and testable**
- **Determine what testing is necessary to assess all the requirements (i.e., identify the right thing to do)**
- **Identify project constraints - time, equipment, funding, personnel**
- **Perform cost/benefit analysis - affordable confidence level**
- **Prioritize testing - if we can't test everything**

How Much Testing is Enough

- **Scope of testing depends on:**
 - **Mission criticality**
 - **System complexity**
 - **Number and criticality of the interfaces**
 - **Maturity of technology**
 - **System performance in the field, exercises, participation in other tests, etc.**

**JITC SMEs will make determination
Focus on quality rather than quantity of tests**

Interoperability Certification Evaluation Plan

Interoperability Certification Evaluation Plan (ICEP)

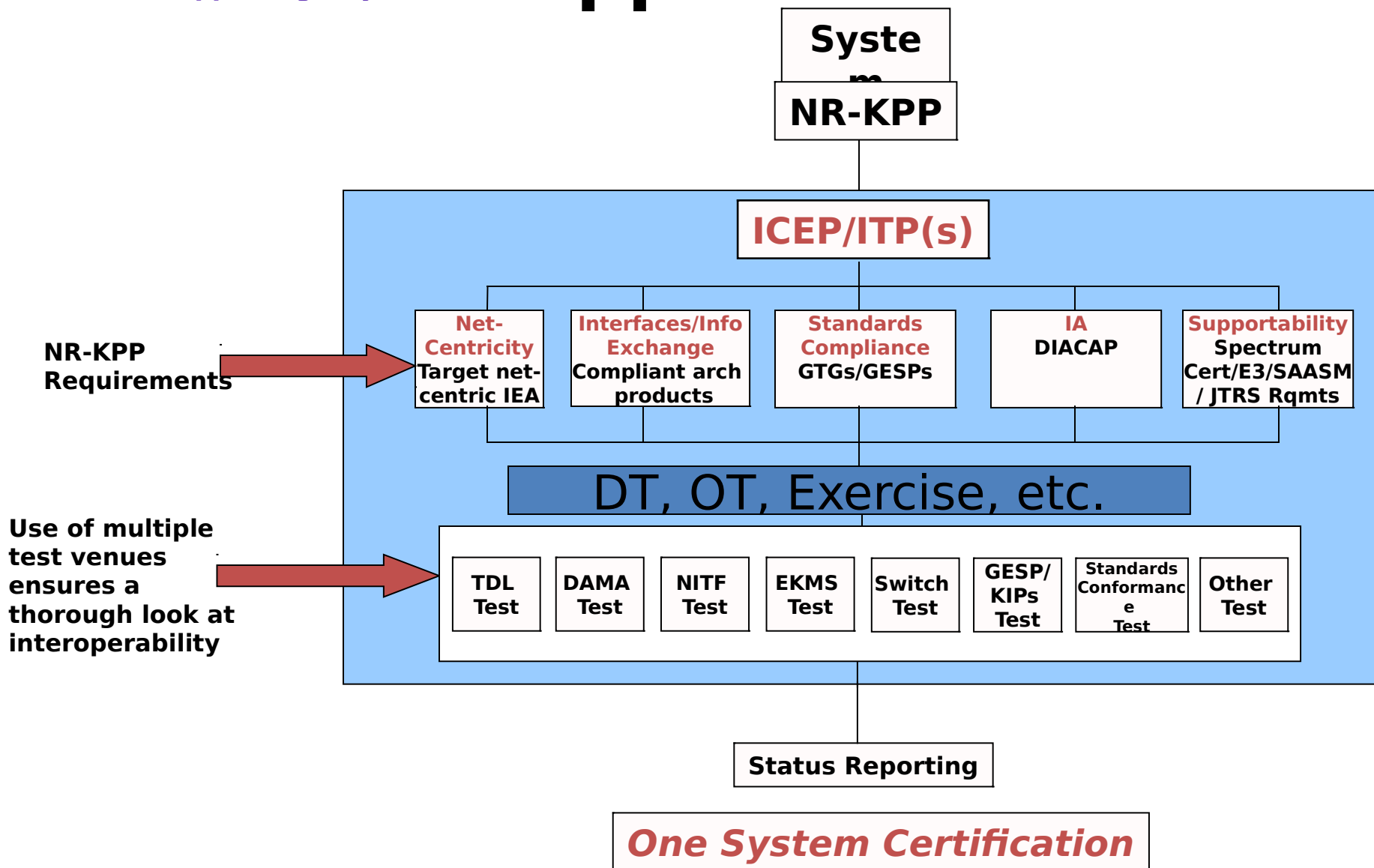
- Complex system or FOS/SOS
- Multiple evaluation events
- Significant reliance on non-JITC tests

JITC Interoperability Test Plan (ITP)

- System is not complex
- Few evaluation events
- JITC performs majority of the testing

ITP(s) always required for JITC tests - ICEP may also be needed.

System Certification Approach Model



STEP 3

Step 3:

**Collect & Analyze
Interoperability
Data**

Collect & Analyze Interoperability Data

- **Collect and examine all available valid data:**
 - GTGs/GESPs, compliance with net-centric data and services strategies/DoD IEA, DoD IA requirements, information/data exchanges IAW compliant solution architecture products, Spectrum Certification and E3/SAASM/JTRS requirements
- **Valid data must be:**
 - Comprehensive
 - Accurate
 - Reliable and repeatable
- **Analysis:**
 - Unbiased
 - Conclusive results representing entire range of operational uses, configurations, and conditions
 - Assessment of expected operational impact for any discrepancies

Provide the warfighter/user with a complete picture of capabilities, problems, and risks

STEP 4

Step 4:

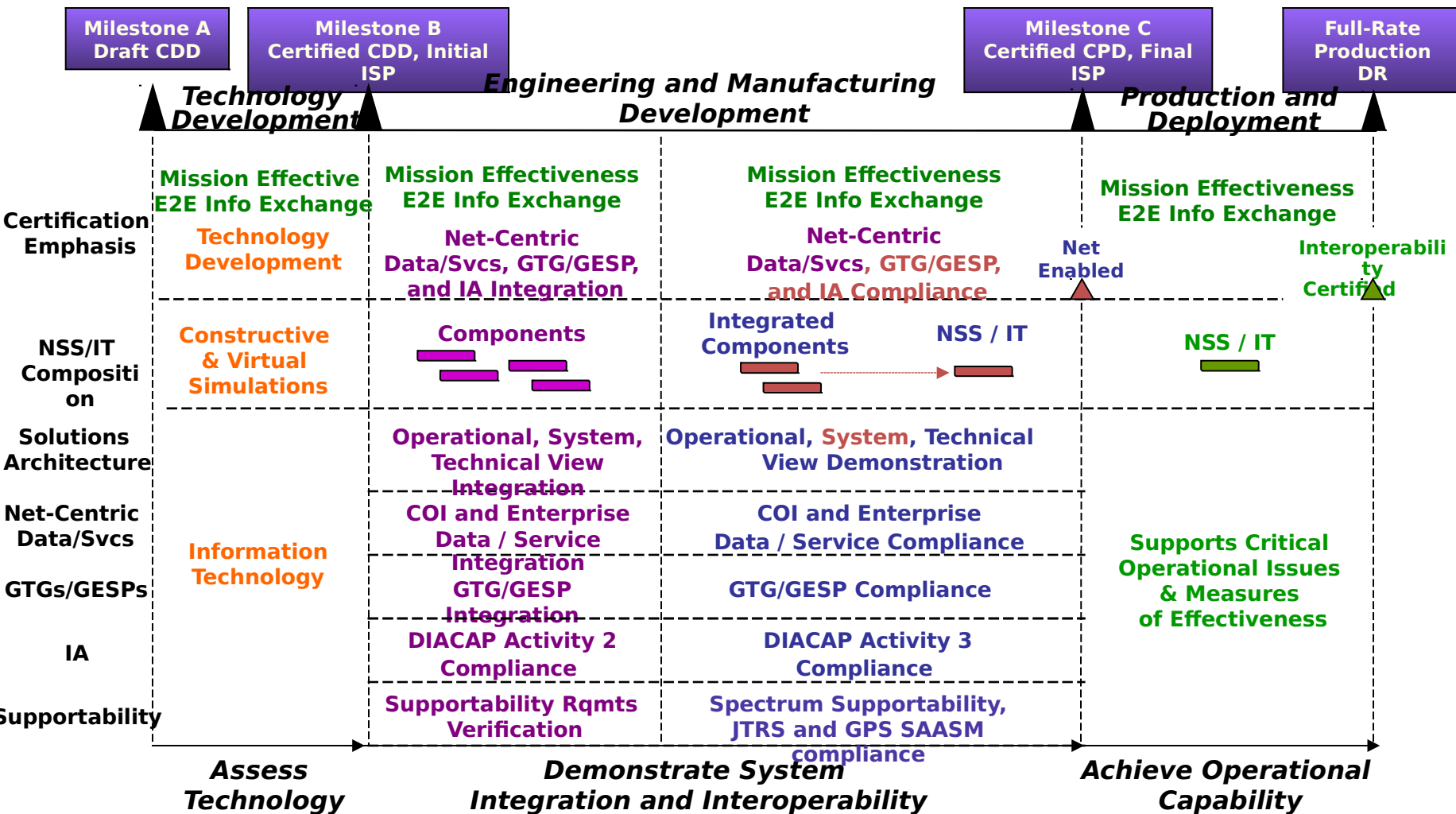
**Determine the
Interoperability
Status**

Interoperability Test & Certification

Certification	Description	System can be fielded (Y/N)?
Standards Conformance Certification	System is certified for conformance to a standard/standards profile	No
Joint Interoperability Test Certification	Full system certification. System meets at least <u>all critical</u> interoperability requirements	Yes
Limited Joint Interoperability Test Certification	System meets <u>subset</u> of critical interoperability requirements	Yes, with ICTO
Interim Joint Interoperability Test Certification	A capability module has adequately demonstrated interoperability for at least <u>all critical</u> threshold requirements identified for the increment	Yes
Special Interoperability Test Certification	Based on other J-6 approved requirements (i.e., no NR-KPP) -- E.g., use of UCR for voice switches	Yes
Non-Certification	Critical operational impacts expected Provides a warning to the warfighter	No
Interoperability Assessment	PM would like to determine the interoperability status System may lack J-6 certified	No

DISA NR-KPP Testing Timeline

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NR-KPP evaluation approach developed before MS



Policy Team

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(520) 538-5025, DSN 879-5025

(520) 538-5214, DSN 879-5214

(520) 538-0365, DSN 879-0365

(520) 538-2527, DSN 879-2527

Keys to Successful Implementation



Early Involvement

*JS-J6-certified
Reqs
JITC
Funded
Test
Program*

Close Coordination

*PM, DT, OT,
& User
Communities*

Rely On

*Multiple
Evaluation
Events
&
Organizations*

Standards Conformance

*Not
Sufficient
But
Necessary*

**Functional And Operational Interoperability
A Must**

*Requires an
Operationally
Realistic
Environment*

Summary

- **Each system will have a single JITC POC to coordinate review of requirements documents, funding, planning, testing, and certification.**
- **Interoperability requirements must be certified by the Joint Staff J-6.**
- **Certification process applied to all systems:**
 - **ACAT, Non-ACAT, Fielded**

Summary (Continued)

- **System-level Interoperability Test Certification:**
 - Meets all certified requirements
 - Tested in operationally realistic, end-to-end, environment
- **Incremental progress reported:**
 - Standards conformance certification
 - Interoperability assessment
 - Limited Joint Interoperability Test certification
- **Interoperability Test Certification issued by JITC validated by Joint Staff J-6.**



Questions?

